

## DRAFT RULEMAKING SHADING LEGEND

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### 10 CSR 10-5.300 Control of Emissions From Solvent Metal Cleaning

(1) Applicability.

- (A) This rule shall apply throughout the city of St. Louis and St. Charles, St. Louis, Jefferson and Franklin Counties.
- (B) This rule shall apply to all installations that emit volatile organic compounds (VOCs) from solvent metal cleaning or degreasing operations.

- (C) This rule applies to **any of the following** ~~[all]~~ processes which use **nonaqueous solvents to clean and remove soils from metal parts:**~~[spray gun cleaners, cold cleaners, open-top vapor degreasers or conveyORIZED degreasers, using nonaqueous solvents to clean and remove soils from metal surfaces.]~~

- 1. **Spray gun cleaners,**
- 2. **Cold cleaners with a solvent reservoir or tank,**
- 3. **Open-top or conveyORIZED vapor degreasers, or**
- 4. **Air-tight or airless cleaning systems.**

(D) Exemptions.

- 1. The following shall be exempt from this rule:
  - A. **Cold cleaners with liquid surface areas of one (1) square foot or less or maximum capacities of one (1) gallon or less;**
  - B. **Solvent cleaning operations that meet the emission control requirements of 10 CSR 10-5.295, 10 CSR 10-5.330, 10 CSR 10-5.340 or 10 CSR 10-5.442;**
  - C. **Solvent metal cleaning operations regulated under 40 CFR 63 Subpart T, National Emission Standards for Halogenated Solvent Cleaning;**
  - D. **The cleaning of electronic components, medical devices or optical devices;**
  - E. **Hand cleaning/wiping operations; and**
  - F. **Flush cleaning operations.**
- 2. The following shall be exempt from the solvent vapor pressure requirements of subparagraphs (3)(A)1.A. and (3)(A)1.B. of this rule:
  - A. **Sales of cold cleaning solvents in quantities of five (5) gallons or less;**

- B. Cold cleaners or open-top vapor degreasers using solvents regulated under any federal National Emission Standard for Hazardous Air Pollutants; and
  - C. Janitorial and institutional cleaning.
3. All wastes that are subject to hazardous waste requirements at 10 CSR Division 25, Chapters 4 through 9 shall be exempt from the requirements of subparagraphs (3)(B)1.E., (3)(B)2.J., (3)(B)3.G., (3)(B)4.F. and (3)(B)5.G., and subsection (4)(A) of this rule.

(2) Definitions.

- (A) Airless cleaning system—A degreasing machine that is automatically operated and seals at a differential pressure of 25 torr (25.0 millimeters of Mercury (mmHg) (0.475 pounds per square inch (psi)) or less, prior to the introduction of solvent vapor into the cleaning chamber and maintains differential pressure under vacuum during all cleaning and drying cycles.
- (B) Air-tight cleaning system—A degreasing machine that is automatically operated and seals at a differential pressure no greater than 0.5 pounds per square inch gauge (psig) during all cleaning and drying cycles.
- (C) Aqueous solvent—Any solvent consisting of sixty percent (60%) or more by volume water with a flashpoint greater than ninety-three degrees Celsius (93°C) (one hundred ninety-nine point four degrees Fahrenheit (199.4°F)) and is miscible with water.
- (D) Electronic components—All portions of an electronic assembly, including, but not limited to, circuit board assemblies, printed wire assemblies, printed circuit boards, soldered joints, ground wires, bus bars, and associated electronic component manufacturing equipment such as screens and filters.
- (E) **Flush cleaning—The removal of contaminants such as dirt, grease and coatings from a component or coating equipment by passing solvent over, into or through the item being cleaned. The solvent drained from the item may be assisted by air, compressed gas, hydraulic pressure or by pumping.**
- (F)[~~(E)~~] Freeboard area—The air space in a batch-load cold cleaner that extends from the liquid surface to the top of the tank.
- (G)[~~(F)~~] Freeboard height—
  - 1. The distance from the top of the solvent to the top of the tank for batch-loaded cold cleaners;
  - 2. The distance from the air-vapor interface to the top of the tank for open-top vapor degreasers; or
  - 3. The distance from either the air-solvent or air-vapor interface to the top of the tank for conveyORIZED degreasers.
- (H)[~~(G)~~] Freeboard ratio—The freeboard height divided by the smaller of either the inside length or inside width of the degreaser.
- (I) **Hand cleaning/wiping operation—The removal of contaminants such as dirt, grease, oil and coatings from a surface by physically rubbing it with a material such as a rag, paper or cotton swab that has been moistened with a cleaning solvent.**

- (J) **Institutional cleaning**—Cleaning activities conducted at organizations, societies or corporations including, but not limited to schools, hospitals, sanitariums and prisons.
- (K) **Janitorial cleaning**—The cleaning of building or facility components such as the floors, ceilings, walls, windows, doors, stairs, bathrooms, kitchens, etc.
- (L)(~~H~~) **Medical device**—An instrument, apparatus, implement, machine, contrivance, implant, *in vitro* reagent or other similar article, including any component or accessory that meets one (1) of the following conditions:
  1. It is intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment, or prevention of disease;
  2. It is intended to affect the structure or any function of the body; or
  3. It is defined in the National Formulary or the United States Pharmacopoeia, or any supplement to them.
- (M) **Nonaqueous solvent**—Any solvent not classifiable as an aqueous solvent as defined in subsection (2)(C) of this rule.
- (N) **Optical device**—An optical element used in an electro-optical device and designed to sense, detect or transmit light energy, including specific wavelengths of light energy and changes in light energy levels.
- (O)(~~H~~) **Soils**—Includes, but is not limited to, unwanted grease, wax, grit, ash, dirt[;] and oil[;]. **Spray gun soils, in addition, include unwanted** primers, paint, specialty coatings, adhesives, sealers, resins and deadeners.
- (P) **Spray gun cleaner**—Equipment used to clean spray guns used to apply, but not limited to, primers, paints, specialty coatings, adhesives, sealers, resins or deadeners incorporated into a product distributed in commerce.
- (Q)(~~H~~) Definitions of certain terms specified in this rule, other than those specified in this rule section, may be found in 10 CSR 10-6.020.

(3) General Provisions.

~~[(A) No person shall cause or allow solvent metal cleaning or degreasing operations—~~

- ~~1. Without adhering to operating procedures as contained in this rule and to recommendations by the equipment manufacturer;~~
- ~~2. Without the minimum operator and supervisor training as specified in this rule; and~~
- ~~3. Unless the equipment conforms to the specifications listed in this rule.~~

~~(B)](A) Equipment Specifications.~~

- 1. Cold cleaners.

~~[A. After September 30, 1998—~~

~~(I) No owner or operator shall allow the operation of any cold cleaner using a cold cleaning solvent with a vapor pressure greater than 2.0 millimeters of Mercury (mmHg) (0.038 psi) at twenty degrees Celsius (20°C) (sixty eight degrees Fahrenheit (68°F)) unless the cold cleaner is used for carburetor cleaning;~~

~~(II) No supplier of cold cleaning solvents shall sell or offer for sale any cold cleaning solvent with a vapor pressure~~

greater than 2.0 mmHg (0.038 psi) at twenty degrees Celsius (20°C) (sixty eight degrees Fahrenheit (68°F)) for use within the city of St. Louis and St. Charles, St. Louis, Jefferson and Franklin Counties, unless the cold cleaning solvent is used for carburetor cleaning;

~~(III)~~ No owner or operator shall allow the operation of any cold cleaner using a cold cleaning solvent for the purpose of carburetor cleaning with a vapor pressure greater than 7.0 mmHg (0.133 psi) at twenty degrees Celsius (20°C) (sixty eight degrees Fahrenheit (68°F)); and

~~(IV)~~ No supplier of cold cleaning solvents shall sell or offer for sale any cold cleaning solvent for the purpose of carburetor cleaning with a vapor pressure greater than 7.0 mmHg (0.133 psi) at twenty degrees Celsius (20°C) (sixty eight degrees Fahrenheit (68°F)) for use within the city of St. Louis and St. Charles, St. Louis, Jefferson and Franklin Counties.

~~B. After April 1, 2001~~

A. ~~[(I)]~~ No ~~[owner or operator]~~one shall ~~[operate or allow the operation of any cold cleaner using]~~use, sell or offer for sale for use within the city of St. Louis and St. Charles, St. Louis, Jefferson and Franklin Counties a cold cleaning solvent with a vapor pressure greater than 1.0 mmHg (0.019 psi) at twenty degrees Celsius (20°C) (sixty-eight degrees Fahrenheit (68°F)) unless ~~[the cold cleaner is]~~ used for carburetor cleaning[;].

~~[(II)]~~ No supplier of cold cleaning solvents shall sell or offer for sale any cold cleaning solvent with a vapor pressure greater than 1.0 mmHg (0.019 psi) at twenty degrees Celsius (20°C) (sixty eight degrees Fahrenheit (68°F)) for use within the city of St. Louis and St. Charles, St. Louis, Jefferson and Franklin Counties, unless the cold cleaning solvent is used for carburetor cleaning;

B. ~~[(III)]~~ No ~~[owner or operator]~~one shall ~~[allow the operation of any cold cleaner using]~~use, sell or offer for sale for use within the city of St. Louis and St. Charles, St. Louis, Jefferson and Franklin Counties a cold cleaning solvent for the purpose of carburetor cleaning with a vapor pressure greater than 5.0 mmHg (0.097[5] psi) at twenty degrees Celsius (20°C) (sixty-eight degrees Fahrenheit (68°F))[; and].

~~[(IV)]~~ No supplier of cold cleaning solvents shall sell or offer for sale any cold cleaning solvent for the purpose of carburetor cleaning with a vapor pressure greater than 5.0 mmHg (0.095 psi) at twenty degrees Celsius (20°C) (sixty eight degrees Fahrenheit (68°F)) for use within the

city of St. Louis and St. Charles, St. Louis, Jefferson and Franklin Counties.]

- C. Each cold cleaner shall have a cover which ~~[will]~~ prevents the escape of solvent vapors from the solvent bath while in the closed position or an enclosed reservoir which ~~[will]~~ limits the escape of solvent vapors from the solvent bath whenever parts are not being processed in the cleaner.

~~[D. Exemptions.~~

- ~~(I) Sales of cold cleaning solvents in quantities of five (5) gallons or less shall be exempt from the requirements of parts (3)(B)1.A.(II), (3)(B)1.A.(IV), (3)(B)1.B.(II) and (3)(B)1.B.(IV) of this rule.~~
- ~~(II) The cleaning of electronic components shall be exempt from the requirements of parts (3)(B)1.A.(I) and (3)(B)1.B.(I) of this rule.~~
- ~~(III) Solvent cleaning operations which meet the emission control requirements of 10 CSR 10-5.295, 10 CSR 10-5.330, 10 CSR 10-5.340 or 10 CSR 10-5.442 shall be exempt from the requirements of parts (3)(B)1.A.(I) and (3)(B)1.B.(I) of this rule.~~
- ~~(IV) Cold cleaners using aqueous solvents shall be exempt from the requirements of parts (3)(B)1.A.(I), (3)(B)1.A.(III), (3)(B)1.B.(I) and (3)(B)1.B.(III) of this rule.~~
- ~~(V) Cold cleaners using solvents regulated under any federal National Emission Standard for Hazardous Air Pollutants shall be exempt from the requirements of parts (3)(B)1.A.(I), (3)(B)1.A.(III), (3)(B)1.B.(I) and (3)(B)1.B.(III) of this rule.~~
- ~~(VI) Any cold cleaner with a liquid surface area of one (1) square foot or less or a maximum capacity of one (1) gallon or less shall be exempt from the requirements of parts (3)(B)1.A.(I) and (3)(B)1.B.(I) of this rule.~~
- ~~(VII) The cleaning of medical and optical devices shall be exempt from the requirements of parts (3)(B)1.A.(I) and (3)(B)1.B.(I) of this rule.~~
- ~~(VIII) Air tight or airless cleaning systems shall be exempt from the requirements of parts (3)(B)1.A.(I) and (3)(B)1.B.(I) of this rule if the following requirements are met:~~
  - ~~(a) The equipment is operated in accordance with the manufacturer's specifications and operated with a door or other pressure sealing apparatus that is in place during all cleaning and drying cycles;~~
  - ~~(b) All waste solvents are stored in properly identified and sealed containers, and managed in compliance with the Missouri Hazardous Waste Management~~

Commission rules for reference codified at 10 CSR 25, as applicable. All associated pressure relief devices shall not allow liquid solvents to drain out;

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(c) Spills during solvent transfer shall be wiped up immediately and managed in compliance with the Missouri Hazardous Waste Commission rules for reference codified at 10 CSR 25, as applicable, and the used wipe rags shall be stored in closed containers; and

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(d) A differential pressure gauge shall be installed to indicate the sealed chamber pressure.

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(IX) Janitorial and institutional cleaning shall be exempt from the requirements of parts (3)(B)1.A.(I) and (3)(B)1.B.(I) of this rule.

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(X) Spray gun cleaning. Each owner or operator of a manufacturing and/or rework operation shall clean spray guns used in the application of (and not limited to) primers, paint, specialty coatings, adhesives, sealers, resins and deadeners utilizing one (1) or more of the following techniques:

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(a) Enclosed system spray gun cleaning shall consist of forcing solvent through the gun. Spray gun cleaning machines used to clean spray guns with the exception of remote open top spray gun cleaning machines shall be exempt from the requirements of parts (3)(B)1.A.(I) and (3)(B)1.B.(I) of this rule. Spray guns and nozzles only may be cleaned in remote closed top spray gun cleaning machines containing solvent based materials capable of cleaning, provided the removable clean and spent solvent containers (not to exceed thirty (30) gallons in size) are kept tightly closed or covered at all times except when being accessed or maintained. All remote spray gun cleaning machines shall be operated within the manufacturers specifications. All remote closed top spray gun cleaning machines shall not be operated unless the cover is closed and shall be closed or covered when not in use;

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(b) Nonatomized cleaning shall be exempt from the requirements of parts (3)(B)1.A.(I) and (3)(B)1.B.(I) of this rule. Spray guns shall be cleaned by placing cleaning solvent in the pressure pot and forcing it through the gun with the atomizing cap in place. No atomizing air is to be used. The cleaning solvent from the spray gun

shall be directed into (and not limited to) a pail, bucket, drum, or other waste container that is closed when not in use;

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(c) ~~Disassembled spray gun cleaning shall be exempt from the requirements of parts (3)(B)1.A.(I) and (3)(B)1.B.(I) of this rule. Spray guns shall be cleaned by disassembling and cleaning the components by hand in a cold cleaner, which shall remain closed at all times except when in use. Alternatively, the components shall be soaked in a cold cleaner, which shall remain closed during the soaking period and when not inserting or removing components;~~

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(d) ~~Atomizing cleaning shall be exempt from the requirements of parts (3)(B)1.A.(I) and (3)(B)1.B.(I) of this rule. Spray guns shall be cleaned by forcing the cleaning solvent through the gun and directing the resulting atomized spray into a waste container that is fitted with a device designed to capture the atomized cleaning solvent emissions; and~~

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(e) ~~Cleaning of the nozzle tips of automated spray equipment systems, except for robotic systems that can be programmed to spray into a closed container, shall be exempt from the requirements of part (3)(B)1.D.(X).]~~

[E.]D. An owner or operator of a cold cleaner may use an alternate method for reducing cold cleaning emissions if the owner or operator shows the level of emission control is equivalent to or greater than the requirements of ~~[parts (3)(B)1.A.(I), (3)(B)1.A.(III), (3)(B)1.B.(I) and (3)(B)1.B.(III)]~~**subparagraphs (3)(A)1.A. and (3)(A)1.B.** of this rule. This alternate method must be approved by the director.

[F.]E. When one (1) or more of the following conditions exist, the **cover shall be designed to** ~~[of the cover shall be such that it can be]~~ **operate** easily ~~[operated with one (1) hand]~~ such that minimal disturbing of the solvent vapors in the tank occurs. (For covers larger than ten (10) square feet, this shall be accomplished by either mechanical assistance such as spring loading or counter weighing or by power systems):

(I) The solvent vapor pressure is greater than 0.3 psi measured at thirty-seven point eight degrees Celsius (37.8°C) (one hundred degrees Fahrenheit (100°F))~~[, such as in mineral spirits];~~

(II) The solvent is agitated; or

(III) The solvent is heated.

- ~~[G.]~~**F.** Each cold cleaner shall have an **internal** drainage facility ~~[which will be internal]~~ so that parts are enclosed under the cover while draining.
- ~~[H.]~~ If an internal drainage facility cannot fit into the cleaning system and the solvent vapor pressure is less than 0.6 psi measured at thirty-seven point eight degrees Celsius (37.8°C) (one hundred degrees Fahrenheit (100°F)), then the cold cleaner shall have an external drainage facility which provides for the solvent to drain back into the solvent bath.
- ~~[I.]~~**G.** Solvent sprays, if used, shall be a solid fluid stream (not a fine, atomized or shower-type spray) and at a pressure which does not cause splashing above or beyond the freeboard.
- ~~[J.]~~**H.** A permanent conspicuous label summarizing the operating procedures shall be affixed to the equipment.
- ~~[K.]~~**I.** Any cold cleaner which uses a solvent that has a solvent vapor pressure greater than 0.6 psi measured at thirty-seven point eight degrees Celsius (37.8°C) (one hundred degrees Fahrenheit (100°F)) or heated above forty-eight point nine degrees Celsius (48.9°C) (one hundred twenty degrees Fahrenheit (120°F)) must use one (1) of the following control devices:
  - (I) A freeboard ratio of at least 0.75;
  - (II) Water cover (solvent must be insoluble in and heavier than water); or
  - (III) Other control systems with a mass balance demonstrated overall VOC emissions reduction efficiency greater than or equal to sixty-five percent (65%). These control systems must receive approval from the director prior to their use.

2. Open-top vapor degreasers.

- A. Each open-top vapor degreaser shall have a cover which will prevent the escape of solvent vapors from the degreaser while in the closed position and shall be designed to open and close easily ~~[with one (1) hand]~~ such that minimal disturbing of the solvent vapors in the tank occurs. For covers larger than ten (10) square feet, easy cover use shall be accomplished by either mechanical assistance, such as spring loading or counter weighing or by power systems.
- B. Each open-top vapor degreaser shall be equipped with a vapor level ~~[safety thermostat with a manual reset which]~~**control device that** shuts off the heating source when the vapor level rises above the cooling or condensing coil, or an equivalent safety device approved by the director.
- C. Each open-top vapor degreaser with an air/vapor interface over ten and three-fourths (10 3/4) square feet shall be equipped with at least one (1) of the following control devices:
  - (I) A freeboard ratio of at least 0.75;



- (II) A refrigerated chiller;
  - (III) An enclosed design (the cover or door opens only when the dry part actually is entering or exiting the degreaser);
  - (IV) A carbon adsorption system with ventilation of at least fifty (50) cubic feet per minute per square foot of air vapor area when the cover is open and exhausting less than twenty-five parts per million (25 ppm) of solvent by volume averaged over one (1) complete adsorption cycle as measured using the reference method specified at 10 CSR 10-6.030(14)(A); or
  - (V) A control system with a mass balance demonstrated overall VOC emissions reduction efficiency greater than or equal to sixty-five percent (65%) and prior approval by the director.
- D. A permanent conspicuous label summarizing the operating procedures shall be affixed to the equipment.
- ~~[E. Exemption. Open top vapor degreasers using solvents regulated under any federal National Emission Standard for Hazardous Air Pollutants shall be exempt from the requirements of parts (3)(B)1.A.(I), (3)(B)1.A.(III), (3)(B)1.B.(I) and (3)(B)1.B.(III) of this rule.]~~
3. Conveyorized degreasers.
- A. Each conveyorized degreaser shall have a drying tunnel or rotating (tumbling) basket or other means demonstrated to have equal to or better control which shall be used to prevent cleaned parts from carrying out solvent liquid or vapor.
  - B. Each conveyorized degreaser shall have the following safety ~~[switches or equivalent safety]~~ devices ~~[approved by the director]~~ which operate if the machine malfunctions:
    - (I) A vapor level ~~[safety thermostat with manual reset which]~~ **control device that** shuts off the heating source when the vapor level rises just above the cooling or condensing coil; and
    - (II) A spray safety switch, which shuts off the spray pump if the vapor level in the spray chamber drops four inches (4"), for conveyorized degreasers utilizing a spray chamber~~[-]; or~~
    - (III) Equivalent safety devices approved by the director.**
  - C. Entrances and exits shall silhouette workloads so that the average clearance between parts and the edge of the degreaser opening is less than four inches (4") or less than ten percent (10%) of the width of the opening.
  - D. Covers shall be provided for closing off the entrance and exit during hours when the degreaser is not being used.

- E. A permanent, conspicuous label summarizing the operating procedures shall be affixed to the equipment.
- F. If the air/vapor interface is larger than twenty-one and one-half (21 1/2) square feet, one (1) major control device shall be required. This device shall be one (1) of the following:
  - (I) A refrigerated chiller;
  - (II) Carbon adsorption system with ventilation of at least fifty (50) cubic feet per minute per square foot of the total entrance and exit areas (when downtime covers are open) and exhausting less than twenty-five (25) ppm of solvent by volume averaged over one (1) complete adsorption cycle as measured using the reference method specified at 10 CSR 10-6.030(14)(A); or
  - (III) A control system with a mass balance demonstrated overall VOC emissions reduction efficiency greater than or equal to sixty-five percent (65%) and prior approval by the director.

**4. Air-tight or airless cleaning systems. Air-tight or airless cleaning systems shall:**

- A. have a permanent conspicuous label affixed to the equipment summarizing the operating procedures;**
- B. be equipped with a differential pressure gauge to indicate the sealed chamber pressure under vacuum; and**
- C. be equipped with a safety alarm to alert the operator of equipment malfunction.**

**[(C)](B) Operating Procedure[s] Requirements.**

- 1. Cold cleaners.
  - A. Cold cleaner covers shall be closed whenever parts are not being handled in the cleaners or the solvent must drain into an enclosed reservoir except when performing maintenance or collecting solvent samples.
  - B. Cleaned parts shall be drained in the freeboard area for at least fifteen (15) seconds or until dripping ceases, whichever is longer. **Parts having cavities or blind holes shall be tipped or rotated while the part is draining. During the draining, tipping or rotating, the parts shall be positioned so that the solvent drains directly back to the cold cleaner.**
  - C. Whenever a cold cleaner fails to perform within the **rule** operating ~~[parameters]~~ **requirements** ~~[established for it by this rule]~~, the unit shall be shut down immediately and shall remain shut down until **operation is restored to meet the rule operating requirements** ~~[the operator or trained service personnel are able to restore operation within the established parameters]~~.
  - D. Solvent leaks shall be repaired immediately or the ~~[degreaser]~~ **cold cleaner** shall be shut down until the leaks are repaired ~~[by the operator or trained service personnel]~~.

- E. Any waste material removed from a cold cleaner shall be disposed of by one (1) of the following methods **or an equivalent method approved by the director** ~~[and in accordance with the Missouri Hazardous Waste Management Commission rules for reference codified at 10 CSR 10-25, as applicable]~~:
    - (I) Reduction of the waste material to less than twenty percent (20%) VOC solvent by distillation and proper disposal of the still bottom waste; or
    - (II) Stored in closed containers for transfer to—
      - (a) A contract reclamation service; or
      - (b) A disposal facility approved by the director.
  - F. Waste solvent shall be stored in **closed** ~~[covered]~~ containers only.
2. Open-top vapor degreasers.
- A. The cover shall be kept closed at all times except when processing workloads through the **open-top vapor** degreaser, ~~[except when]~~ performing maintenance or collecting solvent samples.
  - B. Solvent carry-out shall be minimized in the following ways:
    - (I) Parts shall be racked, if practical, to allow full drainage;
    - (II) Parts shall be moved in and out of the **open-top vapor** degreaser at less than eleven feet (11') per minute;
    - (III) Workload shall remain in the vapor zone at least thirty (30) seconds or until condensation ceases, **whichever is longer**;
    - (IV) Pools of solvent shall be removed from cleaned parts before removing parts from the **open-top vapor** degreaser freeboard area; and
    - (V) Cleaned parts shall be allowed to dry within the **open-top vapor** degreaser freeboard area for at least fifteen (15) seconds or until visually dry, whichever is longer.
  - C. Porous or absorbent materials such as cloth, leather, wood or rope shall not be degreased.
  - D. If workloads occupy more than half of the **open-top vapor** degreaser's open-top area, rate of entry and removal shall not exceed five feet (5') per minute.
  - E. Spray shall never extend above vapor level.
  - F. Whenever an open-top vapor degreaser fails to perform within the **rule operating requirements** ~~[parameters]~~ ~~[established for it by this rule]~~, the unit shall be shut down until ~~[the operator or trained service personnel are able to restore]~~ operation **is restored to meet the rule operating requirements** ~~[-within the established parameters]~~.
  - G. Solvent leaks shall be repaired immediately or the **open-top vapor** degreaser shall be shut down until the leaks are repaired ~~[by the operator or trained service personnel]~~.
  - H. Ventilation exhaust **from the open-top vapor degreaser** shall not exceed sixty-five (65) cubic feet per minute per square foot of

**open-top vapor** degreaser open area unless proof is submitted that it is necessary to meet Occupational Safety and Health Administration (OSHA) requirements. Fans shall not be used near the **open-top vapor** degreaser opening.

- I. Water shall not be visually detectable in solvent exiting the water separator, **except for automatic water separators that by configuration do not allow visual inspection.**
  - J. Any waste material removed from an open-top vapor degreaser shall be disposed of by one (1) of the following methods or **an equivalent method approved by the director** ~~[and in accordance with the Missouri Hazardous Waste Management Commission rules for reference codified at 10 CSR 10-25, as applicable]:~~
    - (I) Reduction of the waste material to less than twenty percent (20%) VOC solvent by distillation and proper disposal of the still bottom waste; or
    - (II) Stored in closed containers for transfer to—
      - (a) A contract reclamation service; or
      - (b) A disposal facility approved by the director.
  - K. Waste solvent shall be stored in closed containers only.
3. Conveyorized degreasers.
- A. Ventilation exhaust **from the conveyorized degreaser** shall not exceed sixty-five (65) cubic feet per minute per square foot of **conveyorized** degreaser opening unless proof is submitted that it is necessary to meet OSHA requirements. Fans shall not be used near the **conveyorized** degreaser opening.
  - B. Solvent carry-out shall be minimized in the following ways:
    - (I) Parts shall be racked, if practical, to allow full drainage; and
    - (II) Vertical conveyor speed shall be maintained at less than eleven feet (11') per minute.
  - C. Whenever a conveyorized degreaser fails to perform within the **rule operating requirements** [parameters] ~~[established for it by this rule]~~, the unit shall be shut down immediately and shall remain shut down until ~~[the operator or trained service personnel are able to restore]~~ operation **is restored to meet the rule operating requirements** ~~[within the established parameters]~~.
  - D. Solvent leaks shall be repaired immediately or the **conveyorized** degreaser shall be shut down until the leaks are repaired ~~[by the operator or trained service personnel]~~.
  - E. Water shall not be visually detectable in solvent exiting the water separator.
  - F. Covers shall be placed over entrances and exits immediately after conveyor and exhaust are shut down and removed just before they are started up.
  - ~~[G. Waste solvent shall be stored in closed containers only.]~~

~~H.]~~**G.** Any waste material removed from a conveyORIZED degreaser shall be disposed of by one (1) of the following methods or **an** equivalent **method approved by the director** [~~and in accordance with the Missouri Hazardous Waste Management Commission rules for reference codified at 10 CSR 10-25, as applicable~~]:

- (I) Reduction of the waste material to less than twenty percent (20%) VOC solvent by distillation and proper disposal of the still bottom waste; or
- (II) Stored in closed containers for transfer to—
  - (a) A contract reclamation service; or
  - (b) A disposal facility approved by the director.

**H. Waste solvent shall be stored in closed containers only.**

**4. Spray gun cleaners. Cleaning of spray guns shall be accomplished by use of one (1) or more of the following methods:**

**A. Enclosed spray gun cleaning. Enclosed system spray gun cleaning shall consist of forcing solvent through the spray gun and/or spray gun parts. Spray guns and/or spray gun parts shall only be cleaned in remote closed top spray gun cleaning machines under the following conditions:**

- (I) The spray gun cleaning machine is operated within the manufacturer's specifications and with the lid kept tightly closed at all times except when being accessed or maintained; and
- (II) Removable containers (which shall not exceed thirty (30) gallons in size) for clean, used and waste solvent, are kept tightly closed except when being accessed or maintained.

**B. Nonatomized spray gun cleaning. Nonatomized spray gun cleaning shall consist of placing solvent in the pressure pot and forcing it through the spray gun with the atomizing cap in place. Spray guns shall only be cleaned through nonatomized spray gun cleaning under the following conditions:**

- (I) No atomizing air shall be used and
- (II) The cleaning solvent from the spray gun shall be directed into a pail, bucket, drum or other waste container that is closed when not in use.

**C. Disassembled spray gun cleaning. Disassembled spray gun cleaning shall be accomplished by disassembling the spray gun to be cleaned and cleaning the components by one (1) of the following methods:**

- (I) By hand in a spray gun cleaner, which shall remain closed except when in use or
- (II) By soaking in a spray gun cleaner, which shall remain closed during the soaking period and when not inserting or removing components.

- D. **Atomized spray gun cleaning.** Atomized spray gun cleaning shall consist of forcing the cleaning solvent through the gun and directing the resulting atomized spray into a waste container that is fitted with a device designed to capture the atomized cleaning solvent emissions.
  - E. **Cleaning of the nozzle tips of an automated spray equipment system** is exempt from the requirements of paragraph (3)(B)4. of this rule, unless the system is a robotic system that is programmed to spray into a closed container.
  - F. **Any waste material removed from an spray gun cleaning system shall be disposed of by one (1) of the following methods or an equivalent method approved by the director:**
    - (I) **Reduction of the waste material to less than twenty percent (20%) VOC solvent by distillation and proper disposal of the still bottom waste; or**
    - (II) **Stored in closed containers for transfer to—**
      - (a) **A contract reclamation service; or**
      - (b) **A disposal facility approved by the director.**
  - G. **Waste solvent shall be stored in closed containers only.**
5. **Air-tight and airless cleaning systems**
- A. **Operate the air-tight and airless cleaning systems with a door or other pressure sealing apparatus in place during all cleaning and drying cycles.**
  - B. **All associated pressure relief devices shall not allow liquid solvent to drain out of the equipment.**
  - C. **Solvent leaks shall be repaired immediately or the air-tight or airless cleaning system shall be shut down until the leaks are repaired.**
  - D. **The air-tight and airless cleaning systems shall be operated within the manufacturer's specifications.**
  - E. **Parts shall be positioned, if practical, to allow full drainage and pools of solvent shall be removed from cleaned parts before removing parts from the air-tight or airless cleaning system.**
  - F. **Wipe up solvent leaks and spills immediately and store the used rags in closed containers.**
  - G. **Any waste material removed from an air-tight and airless cleaning system shall be disposed of by one (1) of the following methods or an equivalent method approved by the director:**
    - (I) **Reduction of the waste material to less than twenty percent (20%) VOC solvent by distillation and proper disposal of the still bottom waste; or**
    - (II) **Stored in closed containers for transfer to—**
      - (c) **A contract reclamation service; or**
      - (d) **A disposal facility approved by the director.**
  - H. **Waste solvent shall be stored in closed containers only.**

~~[(D)]~~(C) Operator and Supervisor Training.

1. Only persons trained in at least the operational and equipment requirements specified in this rule for their particular solvent metal cleaning process shall be permitted to operate the equipment.
2. The ~~[supervisor of]~~ **person who supervises** any person who operates ~~[a]~~ solvent ~~[metal]~~ cleaning **equipment regulated by this rule** ~~[process]~~ shall receive equal or greater operational training than the operator.
3. **A procedural review** ~~[Refresher training]~~ shall be given to all solvent metal cleaning equipment operators at least once each twelve (12) months.
4. Training records shall be maintained per subsections (4)(D) and (4)(E) of this rule.
- ~~[5. — Operator and supervisor personnel training and record keeping is exempt for spray gun cleaning operations that are regulated by 10 CSR 10-5.295 Control of Emissions From Aerospace Manufacturing and Rework.]~~

(4) Reporting and Record Keeping.

- (A) The owner or operator of a solvent metal cleaning or degreasing operation shall keep ~~[monthly]~~ records of ~~[solvent types and amounts purchased and solvent consumed. These records shall include]~~ all types and amounts of solvents containing waste material **from cleaning or degreasing operations** transferred either to a contract reclamation service or to a disposal facility and all amounts distilled on the premises. The records also shall include maintenance and repair logs for both the degreaser and any associated control equipment. The director may require additional record keeping if necessary to adequately demonstrate compliance with this rule.
- (B) ~~[After September 30, 1998, a]~~ All persons **that use any solvent** subject to the requirements of ~~[parts (3)(B)1.A.(I), (3)(B)1.A.(III), (3)(B)1.B.(I), (3)(B)1.B.(III)]~~ **subparagraph (3)(A)1.A. or (3)(A)1.B. of this rule** shall maintain records which include for each purchase of cold cleaning solvent:
1. The name and address of the solvent supplier;
  2. The date of purchase;
  3. The type of solvent; and
  4. The vapor pressure of the solvent in mmHg at twenty degrees Celsius (20°C) (sixty-eight degrees Fahrenheit (68°F)).
- (C) ~~[After September 30, 1998, a]~~ All persons **that sell or offer for sale any solvent** subject to the requirements of ~~[parts (3)(B)1.A.(II), (3)(B)1.A.(IV), (3)(B)1.B.(II), (3)(B)1.B.(IV)]~~ **subparagraph (3)(A)1.A. or (3)(A)1.B. of this rule** shall maintain records which include for each sale of cold cleaning solvent:
1. The name and address of the solvent purchaser;
  2. The date of sale;
  3. The type of solvent;
  4. The unit volume of solvent;
  5. The total volume of solvent; and
  6. The vapor pressure of the solvent measured in mmHg at twenty degrees Celsius (20°C) (sixty-eight degrees Fahrenheit (68°F)).

- (D) A record shall be kept of solvent metal cleaning training **required by subsection (3)(C) of this rule**~~[for each employee except per paragraph (3)(D)5]~~.
- (E) All records required under subsections (4)(A), (4)(B), (4)(C) and (4)(D) of this rule shall be retained for five (5) years and shall be made available to the director upon request.
- (5) Test Methods. *(Not applicable)*